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ABSTRACT

This paper discusses a praxis for increasing student learning using more andragogy-based techniques in the classroom. Today's public school students are not learning to full potential. This is due to old forms of education being used with 20th century students, teachers who still use a content-dominated curriculum, and students who come from unstable families and lack parental support in education. There are seven points upon which to construct a change praxis. These points relate to decision making and problem solving in teaching, educational tradition, changing classroom environments, teacher attitudes, teacher understanding of student behavior, and teacher ability to distinguish between personal, professional, environmental/situational, and school education positions. The paper examines three themes: (1) the extent to which school teachers manifest traditional pedagogy as their primary classroom teaching method, (2) the contextual circumstances under which teacher classroom instructional practice manifests itself regarding personal preferences, and (3) the motivational endeavors needed by classroom teachers when their personal, professional, and/or organizational attitudes compete for precedence. The paper suggests that teachers and teacher education programs should consider using andragogical classroom instructional strategies by adopting any of the many instructional models proven to work in improving student involvement, interest, and motivation for learning. (Contains 68 references.) (SM)

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Learning in 21st Century Public Schools: Andragogy as a Catalyst for Praxis

by
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Introduction

Today's public school student is not learning to full potential. Research reports abound pointing the accusing finger at once at the teacher, the school, the parents, the environment, and at the hapless student. Teachers and their professional and career in teaching has grown into a highly specialized field. Teaching is seen as the best way of identifying, packaging, transmitting and evaluating knowledge shared with our children. However, over the five generations of teacher education a legacy of content, teacher-talk, and fact processing dominance has come to be the primary method of teaching-cum-classroom instruction (Haberman, 1982).

Teaching is a sophisticated process of transmitting content. Learning appears to be a byproduct of the main intent; to successfully matriculate the student to a higher grade or be graduated out of the system. The place called school by structure, organization, financing, and goals is overly focused on the process of graduating the students. One could identify numerous systems operating within today's modern school causing overt dominance of content, student management, and/or classroom management processes. By the same token, one would be hard pressed to identify similar numbers of systems, in

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these same schools, designed with goals to encourage long-term learning. Long-term learning as used here is the skill imparted to the student enabling this student to at once meet life's problems successfully and to be a productive contributor to society. This is accompanied by a generally positive and good character. Meeting life's problems entails having a set of good academic learning skills. Students must have abilities to read, write, do math correctly, and be socialized as a good citizen to function successfully in our republic. Making a student a productive citizen, requires the nation to have a system of effective public schools. Alexander and Salmon (1995) state appropriately, "As a nation we did not create public schools merely to teach persons to read and write, but rather and more fundamentally, to provide universal education for the purpose of maintaining a republican form of government." They believed strongly that, "people do not choose a republican form of government in the abstract; rather, they adopt a republican form of government to acquire and maintain a government of virtue" (p.1)

Background

Schooling in America is steeped in tradition. In the mid-19th century industrialization and immigration changed America. Schools adapted to the booming enrollments by evolving a type of schooling using the `Industrial School Model.' Schools "...probably not deliberately, were following the methods of the factories. Proponents of the factory system in the early 1800s empathized the efficiency achieved through

carefully planned division of labor....[S]chools were similarly efficient in making the maximum use of people and materials" Johanningmeier, 1980, p.96). This model evolved along the lines of how contemporaries perceived the successes of business processes. Classes were managed, regulated, and operated to run smoothly and efficiently. This factory model introduced self-contained classrooms, uniform curricula segmented for each grade, schedules of daily classes times, and annual promotion. This adoption had the purpose of ending `inefficient' one-room schoolhouses. Standardization of school plants, uniformity in the `**what**' and the `**how**' of the learning efficiently conveyed large numbers of students through the place called school. Innovations and school improvements in the late 19th century that were adopted usually revolved around gaining efficiency in the schooling process. For example, telephones, typewrites, public address systems, electric bells, successfully rooted themselves into the schools with this promise of efficiency. Students were encouraged to be cooperative, quiet, and pliant (Cuban, 1995).

Rousseau in *Emile* said of education, "Do the opposite...of what is customary and you will almost certainly be right" (Mulhern, 1959, p.478).

> Christian teachers insisted upon spiritual and mental drudgery to keep youths out of the clutches of the devil, and the formal disciplinarians made education formal, useless, disagreeable, and, sometimes terrifying in order to build strong mental faculties and to fix the habits of thought and behavior...[of their students]. (Mulhern, 1959, pp. 480-481)

Students were viewed as units or products to be transformed into productive and compliant citizens. In this way the school graduate of the 19th century worked for group

and individual good. For example, the bells used in moving students from class-to-class at pre-determined times and patterns were among the ways the factory model prepared the student for the work place. New forms and types of industrial production evolved during the world wars no longer needed individual craftsmen creating a unique array of products. Modern factories wanted cooperation and efficiency in production. For example, the earlier American System of the 18th century [creating interchangeable parts, i.e., muskets for the army] evolved from this mind set. Contemporary industry refined this belief to a new level of efficiency where production of goods was reduced to numerous executions of one task as sub-function to a larger function. In this way more products were completed in shorter time frames by highly routinized, repetitious movements of individuals or small groups of workers. The new work methods (Taylor, 1947) required the workers' understanding of written and oral instructions, be English speaking, willing to follow orders, and to be complacent. These workers were found among the new immigrants to the United States, i.e, Irish, Italian, Slavic. American schools were used to train this resource into workers appropriate for the needs of the new work place, the factory. Vast numbers of immigrants were quickly absorbed into the work cycle by teaching them English using the Basil technique created, in part, to handle the large numbers of workers needing to understand English (Goodlad, 1984). Individuals using the Basil method could acquire a working knowledge of English quickly. The advent of the computer and new knowledge about child psychological and physical development have made these past patterns of schooling obsolete, but the passivity of students and

elements of the Basil method of teaching language arts are still very much alive and well in even the most modern school. Modern practices trying to change these ingrained methods have been tried, but with mixed results. In this vein it has been aptly observed that, "All things are good as their Creator made them, but everything degenerates in the hands of man" (Mulhern, 1959, p. 449).

Schools of the Industrial Revolution period have experienced several waves of extrinsic organizational change. In turn, there has been the compensatory education of the 1960s and 1970s, restructuring schools of the 1980s, the effective school movement of the late 1980s, then a `back to basics,' spanning the 1980s and early 1960s, and more recently every reform effort is wrapped in the whole cloth of making schools ready for the 21st century. Goodlad (1990, 1984) was correct, in his extensive study of school and teachers, in observing that a major part of the problem of teaching and learning was the lack of connection between the `what' and `how' of school,

> Although there is a massive body of research relevant to learning and teaching, it had not previously been connected to the tasks teachers face and the decisions they must make. There had been no agreement among teacher educators over what knowledge (from the mass of research data available) was most likely to empower teachers. (p. 15)

Schools are caught up in a dynamic not of their control. This will always prevail unless educators as <u>leaders</u> step forward as high risk-takers. These school leaders must voice and act out their beliefs. They must model intention of what is right using the most modern validated connecting theory and practice. This whirlwind dynamic relates a leadership conundrum which at once, espouses to development new and exciting ways

and means that efficiently teach a child to learn, staff schools with new teachers mentored by teachers from a previous generation. Herein is the crux; teachers steeped in the old ways, having a high regard for classroom management and pedagogy have a firm belief that knowledge is finite. This necessitates continuing a content-dominated curriculum, one they themselves were taught under whereby using only teacher-centered techniques. Today, at this writing, facing them in the classroom is a new kind of student. This student is a product of the `now' generation. They have a wide availability of free information and interests. Immediate gratification or quick resolution or their preferences. If you want them to learn you have to address these preferences. Another element to this broth is in our society of post-nuclear families; the blended family.

The modern blended family is inherently unstable in form and structure because it evolves within and counter to principles, folkways, and mores of an obsolete past. Having step-parents, step-children, and even step-grandparents, as a growing norm, does not bode well. Blended families do not provide for a happy environment conducive to maximum learning for the child, when compared to a nuclear family. An historical cliché regarding American social development is appropriate here. Americans are consumed by mobility and movement. In turn this mobility and movement, as a product to the growing influence of constant change, has contributed to the destablilization of marriage and the nuclear family as the child nurturer. Parents are too busy making ends meet, maintaining a high standard of living in our consumer society. Providing for family needs by amassing material goods, and generally living the good life is the focus. Lost in this frenzy of

materialist activity is the child's need for a stable environment. An underpinning to learning is environmental stability. Parents who help their children with school work improve the learning of the child. But such parents are not yet in the majority. More of these children are `latch-key', left on their own when it comes to schooling or school work. Parents working hard to achieve the good life have begun looking to the schools to provide this nurturing for the child (Tozer, Violas, & Senese, 1993). As presented herein, the inculcation of this view of students, teaching approaches, and the purposes of schooling appear to be an unsolvable problem. How can student's academic performance and learning be increased in such a milieu? This study will attempt to offer a possible remedy for a small part of this growing school-child-society problem.

Problem Statement

Changing today's student-as-product into a 21st century student-as-learner implies a number of conceptual as well as operational justifications for examining the nature and functions of two theories of teaching and learning outlined in this paper. Summarized below in seven points are the foundations upon which to construct a change praxis; these are:

1. Teaching involves considerable amounts of decision making and problem solving. Such activities inevitably involve the extent to which individual teachers accept or reject preferred classroom instructional alternatives.

2. There has been an overemphasis in education administrative theory, research, and teacher-training on the technical and philosophical aspects of one single teaching approach--pedagogy. Educational tradition has established teaching as one problem solved by one solution--pedagogy.

3. Teachers increasingly find themselves working in changing environments where intellectual conflict about their students are becoming common. "Students living in a post-modern world confront the representatives and guardians of a preceding modernist generation within educational organizations" (Begley & Johansson, 1997, p. 2). Educational stakeholders are regularly buffeted by racial, ethnic, religious, workplace, and individual predilections as regards what is important to learn. This competition for content as the problem-solving panacea is at some distance from current classroom instructional methods.

4. There is an important difference in what education stakeholders articulate as groups or individuals and what they actually believe and practice. Teachers and school administrators regularly employ smokescreens to obscure baser motivations, sometimes feigning objectivity and acceptance about something that is highly individual and subjective--classroom instructional techniques.

5. In a society demanding more accountability for what students learn, teachers and school administrators are reflecting more on their motivations, biases, and teaching methods. They are developing more awareness of their imbedded core values and education topologies that may be incompatible with the more modern

teaching approaches.

6. School teachers can instruct more effectively when they understand the learning needs of their students. In particular, teachers must be able to give reasons for the classroom learning behavior of their students. They must recognize the sources and causes of student's learning behaviors.

7. When called upon to accept different advances in educational teaching and learning, teachers should be able to distinguish between personal, professional, environmental/situational, and school education positions.

Research Questions--Posed

Two themes were used in this paper as a conceptual organizer. These themes provided the structure for the paper's discussion. Each theme is introduced at length as regards the stated research questions.

1.1 To what extent do school teachers manifest traditional pedagogy as their primary classroom teaching method?

1.2 In what contextual circumstance does teacher classroom instructional practice manifest itself as regards a personal preference?

1.3 What motivational endeavors are needed by classroom teachers when their personal, professional, and/or organizational attitudes compete for precedence?

THEME 1-PEDAGOGY: THE TROUBLESOME LEGACY

The School Setting. Pedagogy has its roots in seventeenth century monastic educational history where experiences of monks in educating children and youths evolved as a notion, then a concept, thereupon a loose set of assumptions about effective ways

and means to teach reading, writing, and some ciphering. These assumptions were kept alive by 18th and 19th century missionaries. Pedagogy became firmly entrenched as the accepted manner to conduct successful learning transactions between teacher and student. If not for the two world wars of the 20th century, pedagogy may still have remained intact. Thousands of American veterans returned home to school with help from government legislation. These adults had amassed reservoirs of foreign experiences and felt a great dissonance about the way they were forced to learn in the classroom (Somers, 1988).

In 20th century America what needed to be learned was much different than the knowledge needs of previous centuries. Previously, knowledge had been relatively static. New knowledge of past centuries was created, examined, tested, tested again, and then slowly released for general consumption. Basically this occurred through monasteries and missionaries. After World War I and World War II, these cautious examinations were abandoned due to the sheer vastness of the new knowledge created by war necessities. Therein it was modified for civilian consumption in a post-war society. For example, war time radar, electronics, and engine manufacturing products and processes did not even exist prior to the beginning of the century. Pedagogy as vestiges of a more serene and stable past proved difficult to maintain intact within these new environments. A past where learning was controlled and slowly matured to a high level of refinement before put out for general consumption ended with the guns of August 1914. Previous individual-based knowledge nurturing by the select and static views of pedagogy in

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teaching as the sole mechanism for teaching were augmented in the 1950s and 1960s with more dynamic and pragmatic views toward learning. World culture changed by the second world war's returning veterans who remolded America supported by new waves of assimilated immigrants. Additional foreign folkways and mores from Asia and Latin cultures changed American society. Cultural change became dynamic, the old was out and the new was in. America was no longer a melting pot, but a 'marble cake.' Somers (1988) reported that the ensuing post-world war decades permanently installed the popular view that change was a given. Current beliefs about cultural evolution espouse that severe cultural overhauling of past folkways/mores could be experienced in one generation, whereas previously similar changes would have taken several generations (Somers, 1988; Wallace, 1996; Warren, 1995). For example in the 1960s, many contemporaries of the time watched American values, beliefs, and behaviors dramatically evolve. Somers reported Whitehead's observation,

> We are living in the first period of human history for which this assumption [stasis] is false...today this time-span [of major cultural change] is considerably shorter than that of human life, and accordingly our training must prepare individuals to face a novelty of [ever-changing] conditions. (p. 2)

In 21st century classrooms learning will reflect three incontrovertible influences, of dynamic change, relevance, and size of the accumulated knowledge pool. The cultural, societal, and knowledge development patterns will continue to evolve at an ever increasing pace. Our parents once could have used what they learned in school to make a living over their whole life; not so today. Skills are obsoleting so fast that society has

begun to accept that "job security" is itself obsolete. Change as a process dynamic of what is experienced in the 21st century produces not only dissonance between old and new, but brings to the fore the idea of relevance. There are so many changes, new products, new processes, etc, that to avoid information overload the current focus of individuals are on how relevant is the object to one's self (Pratt, 1993; Somers, 1988).

Change is occurring at such a fast rate that within the early decades of the 21st century all of the existing operate knowledge would have been created within a single generation. The follow-on to relevance, is how to deal with the vastness and variety of the knowledge, facts, information, and processes readily available to all. Research has extensively explored the issue of information overload for businesses, society, and the individual. American business gave up on the education system years ago as not being responsive to their needs or producing a quality product. Businesses today spend billions of dollars educating and training their workers without the outside assistance of schools. The society supposedly preserved by pedagogy, as the dominate teaching theory, has disappeared. Pedagogy is preserving what not longer exist. American's no longer live in the Industrial Age, we are well into the Information Age (Podeschi & Pearson, 1986). The modern school student is growing up in a society that does not at all resemble the past. This past, as being extinct, is not recognized by many teacher-training programs. Recognize this fact; it is long gone.

Students Characteristics. Freedom and democracy in America will further mature in the 21st century. Societal demographics will metamorphous our marble cake

population closer to the founding fathers' ideal as enumerated in the Bill of Rights and the Constitution. What has occurred up to this time regarding freedom, individual rights, and the pursuit of happiness, has been a just precursor to the freedoms evolving on the horizon. With computers becoming more and more prevalent throughout the fabric of our society, students will have unlimited access to any knowledge they want, when they want it, via the growing plethora of database accesses along the information superhighway. Decades of the recent past showed students had the general characteristics of being more externally directed [parents; teachers; localism {folkways, mores}], and more ignorant [limited access to small amounts of knowledge]. Education and schooling were largely extrinsic [motivation came from teachers, expectations of society, etc.]. Students were intellectually truncated by classroom instruction methods, inculcated to be non-critical, passive, accepting, and generally being completely dependent on the teacher. Education was whatever knowledge was passed on to them in a place called school; specifically an `industrial school.'

Students in the 21st century will have different personal characteristics. Learning and knowledge from the information superhighway will be readily available to everybody through personal computes at home, their hangouts, and on their person. This personal freedom of unlimited access to any and all types and kinds of information is unprecedented . These students will be more intrinsically self-directed, curious, and more critical [relevance]. Education and learning at the place called school must have at its core computers, databases, and teacher-as-resources, making these students of the next

millennium self-reliant thinkers (Kazemek & Rigg, 1983; Somers, 1988).

Computers have been the impetus for this evolution. Computers also are a good example of a result. Everyone is familiar and experienced purchasing computers and computer software only for it to be obsolete before you get it installed at home, if not sooner. This phenomena could be an analogous representation of our society. Information used by us to eke out a living is of no relevant value to our children. For future generations, it could be expected that the children's education and knowledge will be obsolete during their work life on one or more occasions (Wood, 1995). At this point it would be informative to examine a typical model of pedagogy.

Pedagogy Model for Teaching and Learning

Method	Teacher Role	Student Role
Lecture dominant	Knowledge given to students	Must master knowledge
Linear	Literalness emphasized	Responds to teacher
Teacher centered	Presumes learning skills	Thinking by trial/error
Text-oriented	Testing, testing, testing	Learning is competitive
Large classes	critical thinking by-product	Be passive and mannered
Student needs ignored	content selector	Learning motivation
Ability grouping	classroom/student manager	is extrinsic
Individual competitiveness	Evaluator-summative	Learn unassociated facts

(Tozer et al., 1993, p. 356).

Summary of Relevant Theory and Research

Pedagogy has been historically defined as the art of teaching children. In using pedagogy there is a specific role for teacher and child. As illustrated by Tozer (1993) the child is viewed as dependent, learning what content is deemed appropriate, under pre-arranged and routine conditions, with frequent summative teacher evaluations. The

teacher has the primary responsibility for the child's learning, deciding the content of the learning, the process of learning, and manager of the child's life at school. The child is encouraged to be a passive receptacle having no control over the learning experiences, no participation in learning decisions, deriving motivation from external sources for extrinsic reasons (Knowles, 1984a, b; Pratt, 1988, 1993; Svetina, 1994; Yonge, 1985).

Pedagogy has structural characteristics reflected in a hierarchal model of schooling where children experience school standards, i.e., education measurement, full-time grading, drop-out prevention, managed in personal habits, and encouraged to exhibit appropriate behaviors. The teacher uses a toolbox of `fix it' teaching methods, and is the learning-focus of historical experiences used in classroom instruction. All of these teacher techniques are based on classical theorist, e.g., Comenius, Humboldt, Dewey, and Piaget. Children are pawns in their own learning where teacher-based heuristic patterns spin in and out of a child's school life, i.e., new techniques for describing learning objectives, didactical analysis of content, and training vs. education for non-academic tracks, etc., (Power, 1969; Svetina, 1994).

Rachal (1983) viewed pedagogy and traditional teaching as a hydra-headed problem. Pedagogy had vestiges of Victorian classroom harshness, where the teacher ruled, used corporal punishment to manage student learning, and tested the children continuously to measure what had been learned. Discipline was key. The children saw this experience as rigid, over-structured, regressive, and non-conducive to learning. Both Svetina (1994) and Rachal (1983) believed pedagogy had been "taking it on the chin" for

years (Rachal, p.15.). Pedagogy as originally conceived never treated children childishly, making them dependent, or limiting their education and learning to process-transmission types of experiences. Human frailties and shortfall can claim credit for the devolving of the pedagogical ideal into the teaching panacea underpinning today's industrial school model largely focused on creating good citizens.

Guiding the child through learning is still largely comprised of rote school experiences with the child merely a product of the process. Steeped in traditional teacher-education philosophies where efficiency, basics, classroom management are premier, the teacher cannon help but to see the child as a product. The 'educated' child has had their behaviors adapted to respond to largely extrinsic learning rationale. By the end of elementary school, extrinsic learning processes have managed to suppress the child's natural curiosity and evolved the child into a compliant, cooperative, and responsive student. It is no wonder that Skinner and Pavlov are so accepted as a core part of pedagogy (Morse & Kelleher, 1977; Skinner, 1978, 1953, 1938; Pavlov, 1932a, b).

Teacher education programs transmit these beliefs directly or indirectly upon a foundation of teacher perceived child-learning assumptions. Pedagogues truly believe the child is naturally dependent upon the teacher, as it was with their mother. Learning, for this teacher, is comprised of teacher-centered learning experiences and perceptions of must-know societal values. The child has had no relevant or useful experiences, and therefore contributes little of value to schooling decisions. Knowledge is found within the teacher. Content is determined not by the child's natural interest, but by pre-established

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rules for readiness to learn determined by chronological age and as identified by testing.

Society, teachers, and teacher-education programs have created a subject oriented string of content experiences designed as a seamless process of appropriate learning from which the child is expected to put to practical use at a later time in life (Davenport & Davenport, 1985a, b; Davenport, 1987; Lusted, 1986, Schunk, 1996). These subjects and content are, of course, divided into learning sub-units sequenced, grade-by-grade, in a logical form where disruption of the teacher routine is minimized. By the time the child is ready for middle school any student uniqueness has been minimized or eliminated (Miller, 1987).

Pedagogy as implemented today within teaching and teacher-education programs is dominated by subject teaching techniques considered under-defined and under-theorized (Lusted, 1986). "It [pedagogy] is an ugly word in print and on the tongue" (p.3). Pedagogy too often refers to a teaching style influenced largely by personality and temperament. It is a means of securing the all important classroom control. Pedagogy as originally envisioned causes a transformation of knowledge among the parties engaged in the learning; the teacher, the child, and the knowledge produced in the interchange and interplay. However, pedagogy denies the value of the child. A pedagogue routinely mis-recognizes the environmental conditions needed for intrinsic learning (Lusted, 1986). "This is the point. Pedagogy can be degrading. It's like saying `I don't know you, but I know what's best for you.'" (Personal communication with J. Stephen Guffey, Arkansas State University, January 1998).

Power, process, and human frailty are at the root of the widespread misapplication of pedagogy in today's schools (Goodlad, 1990). School-based inter-relations between teacher and child is inevitably a power relationship. Schooling occurs in a process environment of mandatory classroom management, organized to meld the mind of the entering kindergarten child, shaped by myriad ethnographic differences into a raw material worthy of teaching. The teacher takes this curious, undisciplined child and through varied forms of main streaming, tracking, "mixed ability" typing, directed group work, and project work evolves the pupil into a child largely responsive to only extrinsic motivators. Teachers using tenants of pedagogy get through the tensions revolving around the syllabus and expressed needs of individual students by compromising classroom instruction enough to fend off complete student withdrawal. Teachers when they must can devise non-threatening strategies enabling learners to make passing grades. Teacher-child pedagogy as practiced in today's schools, allows the child to only accept or reject the traditional terms for learning (Lusted, 1986).

Piaget's Typology

Jean Piaget, a Swiss psychologist, believed that children learn by discovery and participation in the construction of what they need to learn. For Piaget, knowledge was not transmitted verbally, as in a lecture/listener (teacher-talk) classroom format. The child actively acquires facts and experiences, continuously integrating these acquisitions into their developing cognitive-mental structure. Therefore, assimilation of knowledge is a integral part of the child. It is continuous throughout the child's development. Piaget saw

the learning process as involving both affective and cognitive domains; touching and feeling are equally important to cognitive growth. Today's classrooms are as deficient in utilizing this fact as they are abundant in utilizing the dominance of teacher-talk and student-listen learning (Goodlad, 1990, 1984; Morris & Pai, 1976).

Piaget illustrated the importance of child learning and knowing by carefully examining brain structure and observing how a child learns. He paid great attention to the child's cognitive development. For Piaget, biological--physical development, and cognitive development were two sides of the same coin. As the child's body physically grows, organizes, and adapts to its environment, so at the same time goes the child's intellectual growth. The brain grows and organizes its learned experiences through situational activities into increasingly elaborate, but logical systems for knowledge storage and later recall (Piaget, 1972).

Piaget emphasized brain organization and adaptation as central to normal child development. A child learns to organize when it can perform two separate, original acts, like grasping and looking, walking and chewing gum, or bending and reaching. In adapting the child interacts with the environment causing an external behavioral reaction. Continuous interaction with its surroundings causes the brain to develop complex mental organizational structures. Piaget was one of the first to point out that social interactions, behavioral changes due to physical growth, and the acquisition of greater mental competencies followed invariant and predictable stages. These stages of cognitive development were successfully navigated using a schema [the way the child sees the

world and it's personal experiences]. Schemas catagorize and place in the brain [short- or long-term memory] incoming stimuli (Morris & Pai, 1976; Piaget, 1972). For the child, each experience(s) is cognitively compared to existing experiences. Learning and cognitive growth occurs out of these comparisons . This process is constant. In every waking moment old experiences are matched with any new stimuli. The constant activity is called assimilation. Through assimilation the child mentally grows and adapts to its environment. When new stimuli is assimilated and does not match knowledge already integrated, the brain accommodates by creating new schemas to store these new/old experiences. Assimilation and accommodation are symbiotic; they cause a child's cognition to prosper and expand (Piaget, 1972).

Knowledge in this sense is never entirely new or unknown in and of itself. The dynamics of schemas, assimilation, and accommodation work continuously to make incoming stimuli understood. It is through this integrative process that the child can act out behaviors. Understanding the stages through which a child's mental development evolves illustrates Piaget's views of teaching a child. For Piaget, "The order of succession of these stages has been shown to be extremely regular...." Culture and environment only alter the 'readiness' of the child to progress through a particular stage (Morris & Pai, 1976; Piaget, 1972, p. 2). There are four stages of a child's cognitive development, the sensory-motor stage, 0-2 years, involving "instrumental behavior patterns," a pre-operational stage, 2-7 years, involving "formation of symbolic play, mental imagery," the concrete operations stage, 7-11 years, involving development of

"logic of reversible actions...characterized by the formation of...stable and coherent...classification systems...." And, the formal operations stage appearing at 11-15 years, involving the child's ability to "reason in terms of verbally stated hypotheses and no longer merely in terms of concrete objects and their manipulation" (Piaget, pp.2-3). In late adolescence of 15 to 20 years, the child is differentiating attitudes and aptitudes toward knowledge, socialization, learning, and specialization. The child exits public school as a young adult to begin a cognitive development period of specialization that will last a lifetime as perceived through the filter of brain maturity, aptitudes, and attitudes.

Pedagogy of Freire

One contemporary pedagogue often cited when new action oriented teaching and learning ideas are presented is Pablo Freire (Milligan, 1995). According to Freire, teachers use their own individualistic discipline-specific content to pose classroom learning situations. They rationalize this by using their personal knowledge base, and their understanding of it. Freire saw education and educational systems as very political. His perceptions where strongly influenced by personal experiences in South America. Freire, through his writings, shaped radical views about the roles and uses of education in a modern society. State support of American education systems goes far to validate his beliefs. In most state educational systems, counter to what some people would like to believe, there are no explicit evil political purposes. Conspiracies require extensive executive leadership, cooperation, and secrecy. Educators who have been even just

superficially associated with local, state, and federal government executive and legislative organizations can see that our civil servants could never meet all three of these requirements. What could appear to be conspiracy at the federal, state, and local level is more likely the democratic process at work. The routine and natural exercising of the populace's right to elect "C" and "B" level people into public executive positions where they endeavor unsuccessfully, to solve "A" level problems. Freire's political influence of the 'system' is more likely to involve doing favors so as to retain office, rather than a conspiracy to undermine the national or local schools. Freire's banking concept of education represents individual and societal adaptation to the world, rather than it transforming the world.

> Alas, a widespread complaint of teachers and future teachers is that teachers are less than experts in the teaching craft and often fail to practice what they preach. (Goodlad, 1990, p. 75)

Students adaptation to schooling is highly individualized, value-neutral, static, and personal. Students are seen as depositories [banks] of knowledge passed on to them in teacher-centered classrooms without any real involvement in the learning or understanding of its meaning generally, and to themselves specifically. In teacher-talk classrooms the content is the end, not the means, to the process. Teachers who espouse contemporary pedagogy believe the content empowers the student by mere possession: "Learn this, you will need it in the real world." This "banking" belief about knowledge today, does not address the vast amounts of new knowledge available to the child through

home or school computer networks. Knowledge therein is still passed on to the student in school using traditional formats. Dominance of teacher-talk instruction without student involvement is very content-specific, highly fragmented, and places no emphasis on making understood the unrelated facts passed on to students as being important to themselves. Implementation of this pedagogy is devoid. It lacks the integrating processes of critical thinking as learning tools. Whereas, in comparison tenants of andragogy provides these integrating techniques, minimizing adaptation needs. Andragogy is transformational.

> The very claims of pedagogy so universally applicable to all teaching trivialize the wide variations in the significance and complexity of the forms of teaching.... (Goodlad, 1990, p. 50)

THEME 2-ANDRAGOGY AS AN EMERGING PRAXIS

World War II ushered in a new wave of students into American colleges. America emerged as the premier world power in 1945. While this global preeminence was the shortest in recorded history; only being the years between the ending of World War II with dropping the first atomic bomb and the Russian denotation of their own nuclear device in 1949, thereby ushering in the Cold War. Dynamics of business and rising industrial growth necessitated the continuing education of the workforce. Adult education emerged as an important force in colleges and universities. The more progressive institutions recognized the boom to enrollment growth brought on by the returning adult veteran. Flagging traditional student enrollments were bolstered by these highly

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motivated nontraditional students (Volkert, 1985; Weingand, 1996; Yonge, 1985). From this awesome enrollment growth came dissatisfaction of the students with still being treated as children in the classroom. These new students were still seen as having nothing of value, i.e., knowledge or experiences, to contribute to the school based learning experience. Addressing this academic dissonance regarding teaching these students came a sage, the late Malcolm Knowles. With an openness and insight that accompanies the interplay of men and events, Knowles observed that adults and children learn differently. He coined the emerging philosophy or technique of teaching "andragogy." Andragogy is defined as "the art and science of helping the adult learn" (Davenport & Davenport, 1985, p. 7; Merriam, 1993a, b; Yonge, 1985). Dr. Knowles "found the solution in 1967" (Knowles, 1984a, p.6) while in conversation with a seminar student who mentioned that in Europe what he was espousing, andragogy, was used as parallel comparison to pedagogy. Knowles adopted and incorporated this new term into his beliefs. He popularized andragogy and its principles over the next decades by word and action. He first cited the term in a number of article publications beginning in 1968. In 1970, he presented andragogy as a theory of learning separate from pedagogy. One either teaches learners using pedagogy or andragogy; not both. The various differences in the learners are too different. The two principles were dichotomous. Further research on the practice of andragogy then put the two theories on a continuum. Pedagogy held down one end and andragogy the other. The learner fell somewhere in between. However, the research is thin in empirical studies clearly illustrating at what point along this continuum is any

given student in any specific learning activity. Davenport and Davenport (1985, 1987; Knowles, 1984b) stated that learner orientation to the task at hand is of limited value if learning objectives are not used in conjunction with the learning predilection of the learner. In other words, the teacher and learner must mutually cooperate, plan, execute, and evaluate the learning. There has been an extensive debate about various aspects of this andragogy-pedagogy dyad. This debate is still going on between pedagogues and andragogues.

Summary of Relevant Theory and Research

Andragogy evolved at the right time and at the right place, thereby ensuring a permanent place in the education lexicon. Andragogy came into play in the 1960's when existing curricula was deemed staid. A new more behavioral-emotional oriented curricula evolved and knowledge for self-development and self-expression became vogue. Projects, practicums, field work, and experiential learning became more common and accepted as types of learning. By association and profession we are familiar with learning as it takes place in contemporary schools. It would be informative to examine what the literature explains about learning, schooling and the students in the near-term future.

What is Learning-tomorrow. Learning in the 21st century will be more efficient than in the recent past. As previously outlined, students were assumed to learn through a didactic presentation of knowledge, facts, and information carefully selected by the teacher using guidelines provided by state and local governing bodies. Students sat quietly in class for the fifty minute learning sessions, then repeated the sequence down

the hall, in another subject. Within this structure of learning the "hidden curriculum" was as important as the teaching curriculum. The hidden curriculum inculcated students about school and societal expectations regarding "their organization, architecture, time management, teaching methods, and authority structures. Students learn powerful 'lessons', for example, about punctuality, respect for and even fear of authority, time organization, and about the competition for limited rewards in the hidden curriculum" (Tozer, et al., 1993, p. 3). This went on day-after-day for the school year. Regular testing checked on how well students retained the material. The watch words were, class management, quiet, and self-study [not group]. Teacher authority was the focus and core of learning (Pratt, 1988). Schooling emphasized student learning for purposes of citizenship. Selective sacrifices needed to be made by parents and students. All students sacrificed individualism, creativity, and independent judgment in name of being good and productive (Tozer, et al., 1993; Sommers, 1989). It is important to re-emphasize these pedagogical traits here because learning tomorrow will be diametrically different.

Tomorrow, learning as a process will be looked at differently. Already great strides have been made in research and experimentation on ways and means of how best help students learn. For example, there is a greater understanding of the importance of individual cognitive learning styles, advantages and methods using varied classroom instructional models, more student evaluations via portfolios, cooperative learning, and team learning (Delahaye, 1987; Delahaye, Limerick & Hearn, 1994; Dunn & Dunn, 1993; Joyce & Weil, 1996; Ovando, 1990; Podeschi, 1987; Pratt, 1988; Stickney-Taylor &

Sasse, 1990; Thompson, 1989). At this point it would again be informative to examine the major points of andragogy.

Andragogy Model for Teaching and Learning

Method	Teacher Role	Student Role
Dialogical	Collaborative learning	Knowledge base as start
Dialectical	Teaches critical thinking	for lifelong learning
Multisourced	Models learning strategies	Becomes self-motivated
Multiple learning models	Teach comprehensive understanding	Metacognition
Values of student	Integrates and relates content to	Learning is by teams
Normal ability grouping	real world problems/solutions	activities
Cooperative learning focus	Teaches group learning roles	

(Tozer, et al., 1993, p. 356)

The process of learning. American societal characteristics today are represented by rapid advances in technology. This technology with its speed and proliferation by default bring the populace close together, at least in terms of inter-connectivity. As one result different cultures comprising contemporary society are becoming more respected, thereby making the societal fabric stronger, more resilient, tolerant, and appreciative of the synergistic strength flowing out of this diversity and social maturity. Our learning processes will repeat history [Romans, Egyptians] and meld the strongest beneficial elements of our diverse cultures into a true cosmopolitan [world] society. Early in the next millennium work will be dominated by the "service economy." America will be the commercial factor to the world. Change will be commonplace, encouraged, and valued. (Knowles, 1984a, b; Pratt, 1993; Naisbitt, 1982; Toffler, 1970, 1972, 1982; Volkert, 1985).

New students' characteristics will finally make authentic the words, `lifelong

learner.' The lives of individuals will be inter-spaced with concentrated periods of schooling; as training and education. Retraining will not be episodic, but routine. Basic skills acquired from earlier schooling will be invaluable as the one stable element helping people transfer old knowledge to new uses in a world of work bombarded by incessant change (Naisbitt, 1982; Toffler, 1970, 1972, 1982). These new workers will be oriented to problem-posing and problem-solving in the work life. They will possess well developed critical thinking skills learned through routine use of computers since early adolescence. Critical thinking skills will create a sophisticated individual who is media savvy, analytical, and skilled in how to learn.

Approach decades will show knowledge characteristics of facts, data, and information as tentative, being vast, and quickly obsolete. Newly discovered knowledge will be useless within years, not decades. New industry will grow out of the need to catalogue, store, retrieve, evaluate, secure, and disseminate knowledge. Students beginning kindergarten classes this year will be the keepers and protectors of this treasure. Anyone who has worked in any type of formal organization know the power emanating from possessing knowledge and by the same token, the resulting powerlessness from having access to knowledge denied.

Contemporary classroom instructional models have characteristics of being almost universally student-centered. Students passing through school hallways today exhibit increased sophistication. They are comfortable with all kinds of electronic gadgets, computers, complex games, etc., and see these devices as a normal part of their everyday

life. No longer are students willing to sit passively in orderly classroom rows listening to teacher-talk about how important the subject is for them to know for unspecified future use. It is a striking comparison with the story told of two elementary children out in the playground looking up at the sky discussing nomenclature details of passing military jets with each other, comparing aircraft performance characteristics and the like, when the bell rings calling them back into the classroom for a teacher-directed period of stringing plastic beads. Imagine the frustration of a daughter who regularly communicates with dad and mom using p-mail having to sit through such. Students now rebel.

Teaching with classical pedagogy, with the student perceived as an empty vase, is woefully out of sync with surrounding societal needs and society generally. Students routinely tune out this drivel. Where they do their long-term learning is more from their computer games than in such a classroom. Regrettably while critical thinking skills are acquired, both academic content and higher level thinking skills are deficient. These computer games are not designed as learning programs. Though, computers by their operational nature are mentally challenging.

We need to begin viewing the student as a partner in learning. Each partner having a role to play in meeting overall learning goals. One stated school goal, for example, is to produce a productive member for our society. The student should be more involved in planning what needs to be learned, including individual interests and abilities. These should parallel parental/familial objectives. Our failing to consider the abundant evidence regarding student learning preferences, the **why** and **how** of appropriate instructional

classroom instructional models can cause the child to tune out and/or drop out in the short ter. This departure would weaken society by this intellectual loss in the long term. Such a loss could be compared with the intellectual losses suffered by the dead of the lost generations of the world wars fought this century. The missing thinkers, doers, aesthetics, contributors never to be realized in our society is depressing when contemplating such an event. The challenges showing themselves on the horizon, even at this writing, could require more of the "right stuff" than is available.

PERSONAL PREFERENCES AND SUGGESTED TRANSITIONAL METHODOLOGIES

New Learning Praxis. This paper suggests teachers and teacher-education programs should consider using andragogical classroom instructional strategies by adopting any of the many instructional models proven to work in improving student involvement, interest, and motivation for learning. However, this paper does not advocate precipitous adoption. Through use of appropriate staff development processes, support from responsive regional university teacher education programs, school site administrators, and serious individual commitment, an overall change in student academic performance can occur. Selective use of andragogy as a school teaching-learning praxis is evolving. The best approach to maximize the full range of techniques and processes characterizing andragogy is not yet clear in current empirical research.

One can identify the appropriate levels for using andragogical-based classroom teaching, i.e., grades 10, 11, 12. Existing research illustrate that andragogical methods

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could be implemented as a part of secondary schooling. Basic skills like reading, math, etc., in high school can be taught using andragogical techniques. Andragogy, in combination with other appropriate instructional methods, offers a larger repertoire to teachers than presently available. Schooling using the praxis of andragogy can create lifelong learners possessing a useful understandings about how they learn (Knowles, 1984a, b). These students strengthen their natural curiosity of the surrounding world. The same cannot be said of the products created using just various pedagogical derivations diluted and filtered through teacher education programs from the original pedagogy of Piaget (Piaget, 1972). Pedagogy, as a teaching principle should not be arbitrarily tossed out and replaced with andragogy. That would not happen even if one wished it so. There are approximately three cohort generations of teachers currently practicing that make even a one-generation replacement impossible. Research shows that primarily the younger, less experienced teachers have an identifiable preference for andragogical methods (Pratt ,1988). These were trained in a different time and have been culturally institutionalized as pedagogues of some derivation. In teaching kindergarten to middle school pedagogy has a secure place. Children must first be taught how to read, compute, communicate, and socialize before they can become involved in deciding their future learning activities (Pelton, 1996; Snider, 1996; Uchida, Cetron, & McKenzie, 1996). Even putting aside the innumerable individual development issues of self, need, and want, pedagogy is an efficient way to teach fundamental learning skills. In middle school, many concepts, lessons, and assignments can be attended more efficiently using pedagogy.

To begin identification of preferences in ways students and teachers learn one could use a number of available learning style inventories (Dunn & Dunn, 1993). A number of reliable and valid instruments eliciting learner preferences are inexpensive, quick to administer, score, and analyze. Information gained from such analysis can be turned into easy to use processes implementing change to include tested instructional models, integrating staff development experiences, and creating revised school reward systems. These minor decision changes could cause teachers and students to integrate the new teaching/learning modalities into their life long learning repertoire. Learning sub-units, or courses, is not a curriculum. Curriculum is a set of problems solved with increasingly complex knowledge. Curricula are created out of societal need replenished through schooling in the knowledge valued by the society.

> What future teachers experience in schools and classrooms during their years as students profoundly shapes their later beliefs and practices. As teachers, they follow closely the models they have observed. Mental stereotypes developed over years of observing their own teachers are not challenged or fundamentally changed, apparently, by their experiences in formal teacher preparation programs. (Goodlad, 1990, p. xiii)

Learning could be increased by refocusing away from tenants of pedagogy. Is pedagogy appropriate in schooling a 21st century student? An emphatic No! Are pedagogical beliefs of practicing teachers regarding classroom instructional methods appropriate? Again, No. What then, can refocus the teaching process on learning? Andragogy as praxis could be used as part of the solution.

Teacher education programs need to examine their addiction to pedagogy. The

pedagogy currently taught in many teacher-education programs is a misinterpreted, diluted shadow of Jean Piaget's pedagogy. Society, students, and existing knowledge has evolved to a point that the use of pedagogical principles as stand-alone theory is obsolete, even counter-productive.

The purpose of this paper is to suggest that pedagogical practice acknowledge the sophistication of today's students as being knowledgeable, well informed, and experienced. Growing up in post-World War II and post-Korea, when America did not have computers, Internet, and virtual reality, was a time when knowledge was distributed conventionally--primarily through teachers in schools. The 21st century students will have personal computers, access to Internet. They will master sophisticated games that relax them, challenge them, while at the same time confuse their elders. Teacher education programs and teachers need to win back the hearts, and especially the minds of their students by providing interesting learning experiences. Pedagogy no longer offer the ways and means to do this. Andragogy could help.

GREATER LEARNING IN 21ST CENTURY SCHOOLS

Previous themes in this piece about pedagogy and andragogy have outlined and illustrated some existing patterns for teaching and learning. This section discusses a key theme within this framework. How can classroom teachers easily use andragogy as part of their classroom instructional method?

Situational Learning Variables. Teachers must learn to view themselves as lifelong learners before they can effectively imbue it in students. They must see that learning with

the student, as equal partners, is desirable. The teacher only needs to teach the student how to think, not what to think. Teaching-learning then becomes a problem-solving process, no one trying to discover the answer. Andragogy provide mechanisms to end student teacher-centered dependancy. Student's dependency, as regards learning, should be a temporary state. As the student progresses though school a gradual weaning from teacher-centered knowledge should occur with complete independence as the final goal. The circumstance of the dependency and the pace of weaning would depend in large part on the student and specific learning situations (Miller, 1987; Podeschi & Pearson, 1986; Trott, 1991). Evaluations should focus more on the student's ability to give meaning to their accumulated knowledge, facts, and information. Less emphasis needs to be given to summative conclusions from evaluations. More attention should be given to formative exhibitions of learning.

Research Questions--Answered

Research Question 1.1. To what extent do school teachers manifest traditional pedagogy as their primary classroom teaching method?

The Controversy. Much debate has been associated with pedagogy and the newer andragogy revolving around imbedded values professionals hold regarding their worth in the classroom. Early comparative analysis of the two instructional approaches is value-loaded. Andragogy is seen as positive and pedagogy negative, or pedagogy is positive and andragogy negative. It would be better if these two approaches could be examined as value free. This would enable one to confidently select one's use of a classroom technique

governed solely by the situation, the problem to be solved, content to be learned, learner aims, and whole class preferences (Thompson, 1989). Examining andragogy and pedagogy as dichotomus concepts makes for an instructional zero-sum choice for teaching. The evolution of andragogy has passed through several stages toward full maturity. While maturity is well into the future, research indicates that andragogy is at least adolescent (Davenport & Davenport, 1984, 1985a, b; Davenport, 1987; Delahaye, 1987; Pratt, 1988, 1993; Rachal, 1983, 1994; et al.). When first popularized, as gleaned from the writings of Eduard Lindeman and Malcolm Knowles, andragogy was pitted against pedagogy as dichotomus. Andragogy was best for adults; pedagogy best for children and youth. By the 1980s Davenport refined that single dimensional view into a more sophisticated one. Andragogy and pedagogy were not so much two different, mutually exclusive approaches, as similar ones more governed by the learning situation than the student [adult or child]. Viewed as a continuum, andragogy and pedagogy now were seen as situationally appropriate for either adults or youth. However, this flexible view was totally the purview of adult educators. Delahaye wrote a landmark piece illustrating the maturity of andragogy dealing with today's student and their contextual learning states that can be individually determined using his orthogonal grid [see illustration].

Implications and definitions of the orthogonal relationship. Quadrant I--In this learning stage the student requires a high degree of structure be present in the learning environment. Hunt (1976) would consider the learner occupying this stage/quadrant as

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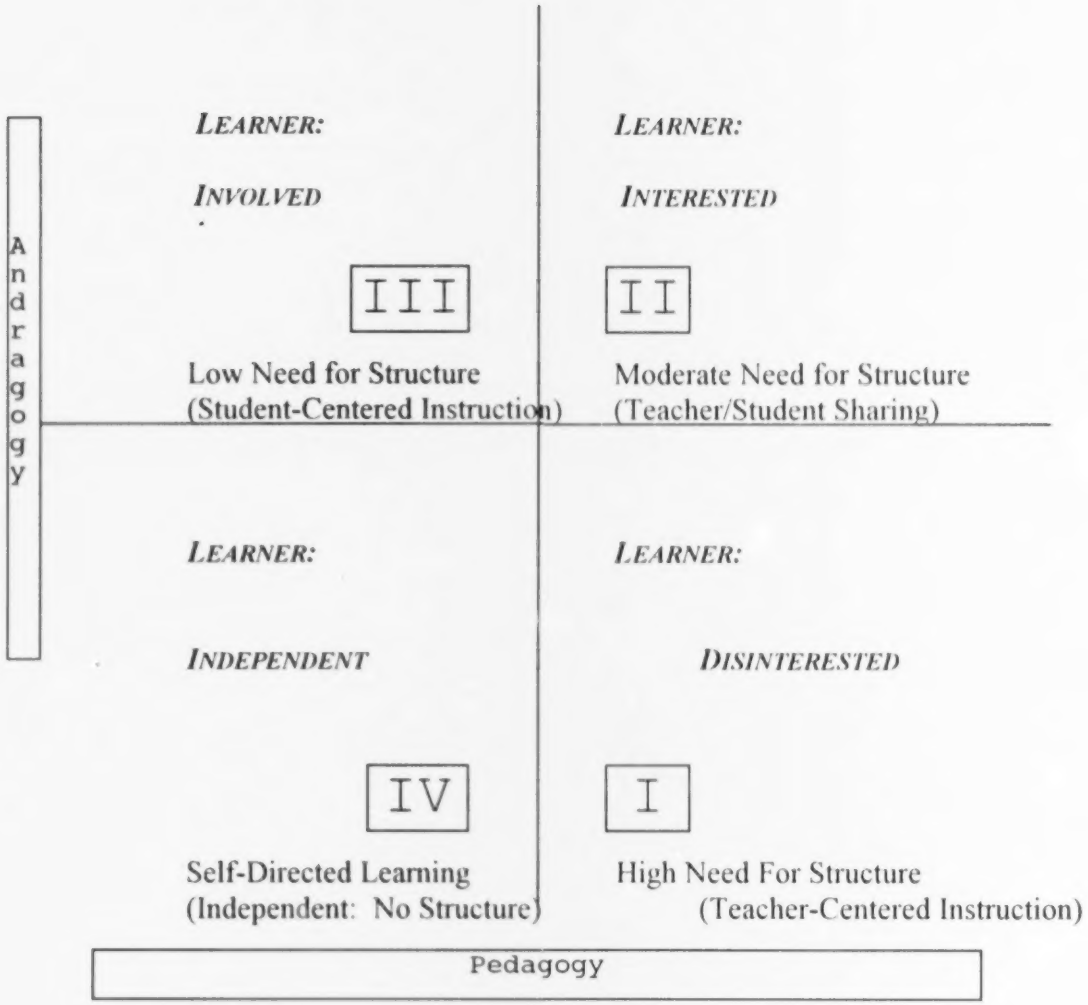

Orthogonal Relationship
Between
Andragogy and Pedagogy

(Delahaye, 1987, p. 5)

having low conceptual level. This student has been characterized by Grow (1991) as dependent and requiring a coach. The teacher plays an authority role in the instructional

models used in this learning stage. Immediate feedback is a hallmark of the instructional models used. Knowles would call the approaches used in this quadrant pedagogy.

Quadrant II--This stage marks a forward movement in the students orientation to learning. In this quadrant the learner becomes interested in the learning process (Grow, 1991). The teacher plays the role of motivator or guide. Hunt (1976) would rate this student's conceptual level as moderately low. Teaching methods used here could be motivating lectures (pedagogy) or they could be discussion sessions classroom whole group activities (andragogy).

Quadrant III--In this stage of learning the learner is becoming mature. He is now involved in the learning process (Grow, 1991). The teacher is a facilitator. The instructional methods used here place the teacher in a position as an equal. The teacher is a partner in the learning process . . . a co-learner. Cooperative learning methods, seminar formats, and group projects might serve as learning vehicles. These methods represent an andragogical approach.

Quadrant IV--In this stage, the learner is now self-directed. Hunt (1976) would see this learner as possessing a very high conceptual level. No structure is required for this learner. Learners will develop their own structure as they seek to solve problems that are meaningful to themselves. The teacher's role is that of consultant (Grow, 1991). The learner views the teacher as just one of the several potential resources as they proceed with the problem-based learning. Examples of learning environments that match this learner would include dissertations, publishing, entrepreneurialism, memberships in study

groups and associations formed around professional questions, problems, and internships (Cross, 1984).

Andragogy has in three decades evolved into a viable alternative view of learning. Though fraught with problems of validity, a platform is now available to provide a fruitful area of continued empirical research. Andragogy has moved from dichotomy (Knowles, 1970), to being a continuum (Davenport, 1987; Davenport & Davenport, 1985a, b; et al.) to a current orthogonal perspective of being an appropriate teaching/learning contextual approach, based on predilections of learner needs (Delahaye, 1987; Delahaye, Limerick, & Hern, 1994; Pratt, 1988). Use of andragogy and/or pedagogy should be primarily determined by the learner, not by the teacher or by the problem/content. Traditional educators are rarely knowledgeable of andragogy. Antecedents of andragogy are replete in current teaching programs in our schools. From this discussion one can reflect on such current teaching practices and find similarities and parallels. The 1960s ushered in a relatively sophisticated view of andragogy and pedagogy. Teaching approaches are now primarily viewed from the perspective of the learner. What has not been accomplished is the way to translate these understandings into schooling practice. Teachers should keep in mind a few benchmarks for taking advantage of andragogy. First, it is important to recognize that use of either andragogy or pedagogy as a teaching/learning theory is based on the learner readiness. Second, once readiness is determined, the learning situation, or environment, is examined. Third, content or the problem to be solved comes into play as a capstone for selecting the appropriate teaching

model. However, though this protocol may at first glance appear to be linear, as in pedagogical theory, it is not. The learning-teaching triage of the student is determined by the teaching professional and probably involve a pedagogy-andragogy instructional mix (Joyce & Weil, 1996).

One then could ask, can one educator subscribe to both concepts? Most decidedly yes. If one accepts the idea that learning is primarily determined by the learner's need for the knowledge and how it will be used in a life situation, i.e., work, career, hobby, general curiosity, then the combination of need and learning preference would be the same for how the learning should be approached. For example, if a youth needed to learn the nomenclature of a specified piece of computer software to complete a work or leisure project then andragogy with its precepts of self-motivation, self-direction, taking responsibility for the learning would be the best choice. The learner already has experiences, i.e., computer knowledge, and an intrinsic motivation to learn the information. Using this same example, but this time the learner is a computer novice. The learner here first must understand how a computer works, the same for the software, and for basic computer accessing. To maximize learning in the second example, a mix of pedagogy and andragogy would be appropriate. Pedagogy would teach the learner needed facts, operation processes, protocols, terms, keying, etc. enabling the student to develop a knowledge base to a point where new information is assimilated, adapted and put to use operating the computer with increasing skill and understanding. With basic patterns of understanding about the computer now learned, the learner could wean away from

dependency [someone telling what, why and how] to a state of increasing independence. Self-motivation, learning with the teacher as facilitator, and using the teacher as a resource all transcend the two teaching approaches. (Joyce & Weil, 1997; Thompson, 1989).

In the 1980s batteries of standardized tests showed an overall improvement in students performance, but students' performance in problem-solving failed to improve. Fourteen to seventeen year old students as a group showed no real cognitive growth in such important abilities as writing coherent paragraphs and deriving meaning from printed materials (Goodlad, 1990; Thompson, 1989). It would appear that while some progress is being made, much needs to be done. Andragogical methods could help to revitalize student's academic problem-solving performance.

Research Question 1.2 In what contextual circumstance does teacher classroom instructional practice manifest itself as regards a personal preference?

A Way Out. To enhance student academic performance, increase a students self-worth, self-esteem, and self-understanding teachers must, 1) find out where the student is in terms of self, personal learning preferences, and individual academic level, 2) appeal to the students' identified learning orientation, and 3) encourage progression to greater responsibility for his/her own learning and assigning subsequent meaning to what is learned. For example a student could be inventoried using a learning style inventory (LSI) as an accurate means to determine orthogonal relationships among andragogy, pedagogy, learning style, learning situations, and self (Delahaye, 1987; Delahaye, Limerick, &

Hearn, 1994; Podeschi, 1987; Pratt, 1988; Stickney-Taylor & Sasse, 1990; Thompson, 1989).

Research Question 1.3 What motivational endeavors are needed by classroom teachers where their personal, professional, and/or organizational attitudes compete for precedence?

Implications for Classroom Instructional Design. Changes in teaching methods would significantly impact areas of content, process, and problem solving. Teachers would focus less on knowledge content as regards reading, math, language, and emphasize the concepts and meaning in the use and understanding of the math, reading skills, and language communication [holistic] for knowledge transfer in careers and basic socialization. It follows then that the teaching-learning process would change. There would be less talking to the students and more communicating with them as to what they, as the target of the learning, see as knowledge needed to make life meaningful. The new orthogonal learning process as a contextual illustration for identifying student learning preferences would be an appropriate mix of applied pedagogy and andragogy along a progressively growing contextual-continuum of learning complexity.

At approximately the middle school level, a very large portion of the school day could involve student learning using andragogical oriented instructional models that focus on problem solving, self-exploration of possible problem solutions, and finding meaning in what is to be learned. The teacher and the student would be learning partners. Together they investigate knowledge and how to use it to resolve unknowns. Games, validated

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instructional models, case studies, computer based simulations, anything reinforcing concepts integrated with problem-solving could be applied. These multiple methods would focus on learner needs, not subject content. This is not to say that teachers need ignore existing curriculum. With a little cooperation and help, school professionals, teachers, administrators, and students could adjust and revise current curricula to better reflect student driven learning needs. Teachers could make lesson plan adjustments to ensure curriculum requirements are met. Cooperating school professionals could evolve a continuous routine of student learning diagnosis, not testing, to identify learner needs, abilities, and interests. This would build high confidence levels in the students. A basic premiss to this teaching-learning approach suggested in this paper revolves around giving full credit to students for what they experientially know from free information previously acquired or absorbed off the information superhighway. Teachers must give them more control. At the least, teachers could expect students to rekindle interest in schooling (Miller, 1987).

Pedagogy is not inherently bad when taken in moderation. Rather like liquor in this sense. Liquor becomes very dependency producing if used in excess.

Conclusions

> The most obvious educational response to the nonlearning of students, one would think, is to try a different instructional approach. Research shows, however, that all but a small part of the time spent on teaching and learning involves a great deal of teacher talk and very little student interaction. (Goodlad, 1990, p. 24)

"Future teachers in college are thus at least as likely as they were in high school to observe teaching methods that should not be replicated" (Goodlad, 1990, p. 26). A possible solution is found in viewing the issue of classroom learning as more holistic (Savicevic, 1991). There is a need for extensive empirical research to be done before this barrier to improved student learning is overcome to a degree that in the classroom only the most effective learning techniques are in evidence. Teachers, administrators, educational specialist, all must cooperate to create visions of high performing students who understand and use what they learned in a place called school. Teachers should facilitate and outline appropriate learning and instructional pathways for their students. They need to recruit students back into the fold of learning (Trott, 1991). School personnel must become "..strong advocates for our conviction that the necessary renewal of schools is most likely to be advanced when renewal efforts are linked closely to the teacher education and research activities of universities" (Goodlad, 1990, p. 29).

This paper has explored several significant issues as regards a praxis for increasing student learning using more andragogy based techniques in the school classroom. It not the expectation of the author that a sunammi of instructional change will issue forth solely based on this piece. If the reader reflects on the suggested methods, approaches and instruments outlined herein, and becomes open to these possibilities, seeing their intrinsic merit, then the author can count coup; the goal of the paper was accomplished. In some final words, the reader should see that,

1) Pedagogy and andragogy are different, but related framework, for instructional designs.

2) Students come to the learning environment with various levels of conceptual abilities. That is, they prefer to learn in different ways, using different learning approaches, and different spacial-time needs.

3) Adhering to only one framework for learning limits the value for the student. The student should determine what primary "treatment" is employed. Diagnosis of educational orientation is needed.

4) Education should be a process of mastering the process of analysis, syzygy [straight-line configuration of relevant, separate, but interrelated parts both inside and outside of the learning experience], and synthesis [whole is more than parts]. Content for content's sake is a static view of education that is woefully obsolete and in need of some adjustment.

5) Facilitating the students ability to respond to new problems and new content is critical. An andragogical framework allows greater flexibility toward learner goals.

6) Andragogy respects and incorporates the life experiences of the learner. This respect increases student investment in, and motivation for, learning. It makes learning and the meaning of the acquired knowledge relevant.

7) Andragogy allows the student to have input into the means and direction of learning objectives. This makes learning more contextual. The student influenced by andragogy is more likely to apply this knowledge in real life.

8) Andragogy puts the emphasis, focus, and responsibility of education where it belongs...on the student.

Andragogy as theory, principle, paradigm, or approach, whatever you prefer to call it, is embedded with five core ideas. First, there is in andragogical tenants a foundation of mutual respect between teacher-student/student-teacher in school. Second, collaborative learning is preeminent. Participants in the learning recognize the paradigm of independence suggested by Piaget regarding cognitive development of the child into

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adulthood. Third, experience is a basis for learning. This paper has outlined the characteristics of the 'post-modern' student. Fourth, relevance, problem-posing, and problem-solving should be the heart of middle-school and high-school learning. And fifth, the learning dyad must become more action oriented. The teacher should be more of a `mid-wife' to the students learning. The teacher should coach, guide, encourage, and rebuke as needed, helping the child discover the knowledge needed to achieve individual goals and objectives. However, the child is still responsible for the actual learning and needs to be evaluated on how well it was learned. Being a passive learner, depending on banking concepts as a primary rationale for using pedagogy is doing the student a disservice, both in the short-term, and definitely in the long-term. Schools have to stop producing `C' products.

A final word. In reflecting on the implications of these observations, and what needs to be initiated to make significant change in classroom instructional methods, this paper will do no more than illustrate what should be. Current teacher education programs are still conducted within an academic environment locked in tradition-bound teaching. It makes no difference what the teacher education programs do to instill future teachers with the right stuff. These modern instructional techniques quickly fall away from the repertoire of these entry-year teachers and are replaced with methods and means dominating their teaching environment or past experiences (Begley & Johansson, 1997; Goodlad, 1990). It was not within this paper's purpose to examine the ramifications of ingratiation behaviors, career mobility points, organization culture, and the like, which

would explain much of the why not of the change encouraged herein. It is not of any real consequence because significant instructional change will not occur as long as the primary focus for change in teaching/learning theory is on the current pool of practicing teachers. Realistically, their patterns of teaching, views of their students, themselves, and their content-orientation are set. The focus must to shift to inculcating teacher education programs and future teachers with andragogical alternatives. It is not to say that current teachers are to be ignored, but as current research indicate, one can do everything positive possible to change teacher's habits in the field; it will not work (Goodlad, 1990). As the famous cartoon strip character Pogo, once said, *'we have met the enemy, and it is us.'* It is us. Teacher educators are the professionals that have to initiate, implement, sustain, and ensure that some level of change occurs. Educational leaders must own up to this responsibility for making changes. The ethos could not be more timely. Elements and methods are all present to change teacher education programs, teaching methods, and provide for a general acceptance of these orthogonal-oriented andragogical methods among teachers. One needs only to look at their willingness to accept fragments and pieces of this same concept within well intended `sit and git' workshops where many of these concepts already have been introduced. But on closer scrutiny, no long term change results. It is an over-processed learning experience where the only thing you learn from making mistakes is how to make mistakes (Milon, J., in Mott & Rampp, 1995). It will just take a small group of local heroes, the educational leaders enrolled in doctoral programs espouse to create such leaders, to start us on the path of change. Target your students for

this change. Remember, what we teach are students. The change has to be grass roots and thoughtfully identified. Leaders of a stripe heretofore considered extinct must step forward and say; 'Enough.'

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